

THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

- 1 1. (Currently Amended) An optical monitor, comprising:
2 a tunable filter for filtering a tapped portion of an optical signal at a
3 predetermined tuning frequency to provide thereby a first filtered optical signal;
4 a directing means for directing the first filtered optical signal back through the
5 tunable filter to provide thereby a second filtered optical signal; and
6 a photodetector for measuring the power of the second filtered optical signal; and
7 a control unit for scanning the tuning frequency of the tunable filter across a
8 frequency band of the optical signal and monitoring the optical power as a function of the
9 tuning frequency.
- 1 2. (previously presented) The optical monitor of claim 1, further comprising an
2 optical coupler for tapping a portion of the optical signal and for directing said second
3 filtered optical signal to said photodetector.
- 1 3. (previously presented) The optical monitor of claim 2, wherein said optical
2 coupler has associated with it a splitting ratio in range from about 1/99 to about 5/99.
- 1 4. (previously presented) The optical monitor of claim 2, wherein said optical
2 coupler comprises a multi-section optical coupler.
5. (cancelled)
- 1 6. (original) The optical monitor of claim 1, wherein said directing means comprises
2 a mirror.

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1 7. (original) The optical monitor of claim 1, wherein said directing means comprises
2 a Sagnac loop.

1 8. (previously presented) The optical monitor of claim 1, wherein said directing
2 means is adapted for reducing polarization dependence of a reflected portion of the first
3 filtered optical signal.

1 9. (original) The optical monitor of claim 8, wherein said directing means comprises
2 a Faraday rotator mirror.

1 10. (original) The optical monitor of claim 8, wherein said directing means comprises
2 a quarter-wave plate.

1 11. (Currently Amended) The optical monitor of claim 1, ~~further comprising a~~
2 wherein the control unit is adapted for tuning said tunable filter across [[a]] the frequency
3 band of the optical signal and monitoring said optical power as a function of a tuning
4 frequency of said tunable filter.

1 12. (original) The optical monitor of claim 1, wherein said tunable filter comprises a
2 plurality of coupled Mach-Zehnder Interferometer filters.

1 13. (original) The optical monitor of claim 12, wherein each of said Mach-Zehnder
2 Interferometer filters comprises at least one phase shifter.

1 14. (previously presented) The optical monitor of claim 12, wherein said tunable filter
2 comprises seven coupled Mach-Zehnder Interferometer filters.

1 15. (previously presented) The optical monitor of claim 1, wherein said tunable filter
2 comprises an exponential distribution of a free-spectral range from 200 to 12800 GHz.

1 16. (Currently Amended) A method of monitoring an optical signal, comprising:

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- 2 a) filtering a tapped portion of the optical signal at a predetermined tuning
3 frequency using a frequency tunable filter to provide thereby a first filtered optical signal;
4 ~~b) substantially polarization dependence of the first filtered optical signal;~~
5 e) b) reflecting the first filtered optical signal back through the tunable filter to
6 provide thereby a second filtered optical signal;
7 ~~d) c)~~ determining the power of the second filtered optical signal as a function of
8 the tuning frequency of the frequency tunable filter; and
9 e) d) repeating steps a) through ~~d) c)~~ throughout a frequency band of the optical
10 signal to determine an optical spectrum of the optical signal.

- 1 17. (Currently Amended) An optical monitor, comprising:
2 a first means for tapping a portion of an optical signal;
3 a frequency tunable means for filtering a tapped portion of an optical signal at a
4 predetermined frequency to provide thereby a first filtered optical signal;
5 a second means for reflecting the first filtered optical signal back through the
6 frequency tunable means and the first means to provide thereby a second filtered optical
7 signal; and
8 a third means for measuring the optical power of the second filtered optical
9 signal; and
10 a fourth means for scanning the tuning frequency of said tunable means across a
11 frequency band of the optical signal and for monitoring the optical power as a function of
12 the tuning frequency.

18. (cancelled)

- 1 19. (previously presented) The optical monitor of claim 17, wherein the second means
2 is adapted for reducing polarization dependence of a reflected portion of the first filtered
3 optical signal.

20. (cancelled)

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21. (cancelled)